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09/966,718	09/27/2001	Shunji Watanabe	S004-4404	6393

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ADAMS & WILKS
31st Floor
50 Broadway
New York, NY 10004

EXAMINER

TSANG FOSTER, SUSY N

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,718

Applicant(s)

WATANABE ET AL.

Examiner

Susy N Tsang-Foster

Art Unit

1745

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 33-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 33-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1745

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the amendment filed on 1/12/2004. Claims 1-11 have been amended. Claims 12-32 have been cancelled. Claims 33-40 have been added. Claims 1-11 and 33-40 are pending and are finally rejected for reasons necessitated by applicant's amendment.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in Japan on 9/28/2000, 4/16/2001, 7/13/2001, and 9/25/2001. It is noted, however, that applicant has not filed a certified copy of the foreign priority applications as required by 35 U.S.C. 119(b).

Specification

3. The amendment filed 1/12/2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

In the new abstract, the statement that the non-aqueous electrolyte secondary battery is screened for abnormalities as the heating temperature of the non-aqueous electrolyte secondary battery rises is not in the original disclosure.

Art Unit: 1745

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-11 and 33-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, the limitation "screening the non-aqueous electrolyte secondary battery for abnormalities as the heating temperature of the non-aqueous electrolyte secondary battery rises during the heating step" is not supported by the original disclosure.

In claim 4, the limitation "screening the non-aqueous electrolyte secondary battery for abnormalities as the heating temperature of the non-aqueous electrolyte secondary battery rises during the heating step" is not supported by the original disclosure.

Art Unit: 1745

In claim 6, the limitation "a temperature difference between a temperature-time profile of the heating step and a temperature-time profile of the reflow soldering step is within $\pm 50\%$ in a heating region of 0 to 150 °C" is not in the original disclosure.

In claim 8, the limitation "a temperature difference between a temperature-time profile of the heating step and a temperature-time profile of the reflow soldering step is within $\pm 20\%$ in a heating region of 150 to 180 °C" is not in the original disclosure.

In claim 10, the limitation "a temperature difference between a temperature-time profile of the heating step and a temperature-time profile of the reflow soldering step is within $\pm 10\%$ in a heating region of 180 to 300 °C" is not in the original disclosure.

In claim 35, the limitation "screening the non-aqueous electrolyte secondary battery for abnormalities as the heating temperature of the non-aqueous electrolyte secondary battery rises during the heating step" is not supported by the original disclosure.

In claim 38, the limitation "maintaining a temperature difference between the preselected temperature-time profile of the heating step and a temperature-time profile during reflow soldering to within $\pm 50\%$ in a heating region of 0 to 150 °C" is not in the original disclosure.

Art Unit: 1745

In claim 39, the limitation "maintaining a temperature difference between the preselected temperature-time profile of the heating step and a temperature-time profile during reflow soldering to within $\pm 20\%$ in a heating region of 150 to 180 °C" is not in the original disclosure.

In claim 40, the limitation "maintaining a temperature difference between the preselected temperature-time profile of the heating step and a temperature-time profile during reflow soldering to within $\pm 10\%$ in a heating region of 180 to 300 °C" is not in the original disclosure.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-11, and 33-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 4, and 35, the limitation "screening the non-aqueous electrolyte secondary battery for abnormalities as the heating temperature of the non-aqueous electrolyte secondary battery rises during the heating step" is indefinite because it is unclear what these abnormalities are and the term "abnormalities" has not been clearly defined in the specification.

Art Unit: 1745

In claim 6, the limitation "a temperature difference between a temperature-time profile of the heating step and a temperature-time profile of the reflow soldering step is within $\pm 50\%$ in a heating region of 0 to 150 °C" is indefinite because it is unclear how the temperature difference is taken between the two different profiles. For example, how is the comparison made between the two profiles if each profile had a different time span interval in the heating region of 0 to 150 °C? How are the points chosen on the temperature-time profile of the heating step to be compared to the points chosen on temperature time profile of the reflow soldering step in order to determine that the temperature difference between the two profiles is within $\pm 50\%$ in a heating region of 0 to 150 °C?

In claim 7, the limitation "wherein the difference between a duration of the heating step and a duration of the reflow soldering step is within $\pm 50\%$ in a heating region of 0 to 150 °C" is indefinite because it is unclear at what temperature or temperatures the difference is being measured. It is also unclear how the difference can be measured if the heating step is carried out over a variable temperature profile and the reflow soldering step is carried out over a variable temperature profile.

In claim 8, the limitation "a temperature difference between a temperature-time profile of the heating step and a temperature-time profile of the reflow soldering step is within $\pm 20\%$ in a heating region of 150 to 180 °C" is indefinite because it is unclear how the temperature difference is taken between the two different profiles. For example, how is the comparison made between the two profiles if each profile had a different time span interval in the heating region of

Art Unit: 1745

150 to 180 °C? How are the points chosen on the temperature-time profile of the heating step to be compared to the points chosen on temperature time profile of the reflow soldering step in order to determine that the temperature difference between the two profiles is within $\pm 20\%$ in a heating region of 150 to 180 °C?

In claim 9, the limitation "wherein the difference between a duration of the heating step and a duration of the reflow soldering step is within $\pm 20\%$ in a heating region of 150 to 180 °C" is indefinite because it unclear at what temperature or temperatures the difference is being measured. It is also unclear how the difference can be measured if the heating step is carried out over a variable temperature profile and the reflow soldering step is carried out over a variable temperature profile.

In claim 10, the limitation "a temperature difference between a temperature-time profile of the heating step and a temperature-time profile of the reflow soldering step is within $\pm 10\%$ in a heating region of 180 to 300 °C" is indefinite because it is unclear how the temperature difference is taken between the two different profiles. For example, how is the comparison made between the two profiles if each profile had a different time span interval in the heating region of 180 to 300 °C? How are the points chosen on the temperature-time profile of the heating step to be compared to the points chosen on temperature time profile of the reflow soldering step in order to determine that the temperature difference between the two profiles is within $\pm 10\%$ in a heating region of 180 to 300 °C?

Art Unit: 1745

In claim 11, the limitation "wherein a difference between a duration of the heating step and a duration of the reflow soldering step time is within $\pm 10\%$ in a heating region of 180 to 300 °C" is indefinite because it is unclear at what temperature or temperatures the difference is being measured. It is also unclear how the difference can be measured if the heating step is carried out over a variable temperature profile and the reflow soldering step is carried out over a variable temperature profile.

In claim 38, the limitation "maintaining a temperature difference between the preselected temperature-time profile of the heating step and a temperature-time profile during reflow soldering to within $\pm 50\%$ in a heating region of 0 to 150 °C" is indefinite because it is unclear how the temperature difference is taken between the two different profiles. For example, how is the comparison made between the two profiles if each profile had a different time span interval in the heating region of 0 to 150 °C? How are the points chosen on the preselected temperature-time profile of the heating step to be compared to the points chosen on temperature time profile of the reflow soldering step in order to determine that the temperature difference between the two profiles is within $\pm 50\%$ in a heating region of 0 to 150 °C?

In claim 38, the limitation "fabricating a non-aqueous electrolyte secondary battery according to claim 35" is indefinite because it is unclear if claim 38 depends on the method of claim 35 or a battery product fabricated by the method of claim 35. The claim language of claim 38 is confusing and also not conventionally accepted. Claim 35 is drawn to a method of fabricating a non-aqueous electrolyte secondary battery and not to a battery product. Method

Art Unit: 1745

claim 38 should be able to stand alone and should not depend on a different method as recited in claim 35.

Similarly, in claim 39, the limitation "fabricating a non-aqueous electrolyte secondary battery according to claim 35" is indefinite because it is unclear if claim 39 depends on the method of claim 35 or a battery product fabricated by the method of claim 35. The claim language of claim 39 is confusing and also not conventionally accepted. Claim 35 is drawn to a method of fabricating a non-aqueous electrolyte secondary battery and not to a battery product. Method claim 39 should be able to stand alone and should not depend on a different method as recited in claim 35.

In claim 39, the limitation "maintaining a temperature difference between the preselected temperature-time profile of the heating step and a temperature-time profile during reflow soldering to within $\pm 20\%$ in a heating region of 150 to 180 °C" is indefinite because it is unclear how the temperature difference is taken between the two different profiles. For example, how is the comparison made between the two profiles if each profile had a different time span interval in the heating region of 150 to 180 °C? How are the points chosen on the preselected temperature-time profile of the heating step to be compared to the points chosen on temperature time profile of the reflow soldering step in order to determine that the temperature difference between the two profiles is within $\pm 20\%$ in a heating region of 150 to 180 °C?

Art Unit: 1745

In claim 40, the limitation "maintaining a temperature difference between the preselected temperature-time profile of the heating step and a temperature-time profile during reflow soldering to within $\pm 10\%$ in a heating region of 180 to 300 °C" is indefinite because it is unclear how the temperature difference is taken between the two different profiles. For example, how is the comparison made between the two profiles if each profile had a different time span interval in the heating region of 180 to 300 °C? How are the points chosen on the preselected temperature-time profile of the heating step to be compared to the points chosen on temperature time profile of the reflow soldering step in order to determine that the temperature difference between the two profiles is within $\pm 10\%$ in a heating region of 180 to 300 °C?

Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. As best understood, claims 1-11 and 33-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Mori et al. (US 6,274,277 B1).

Art Unit: 1745

Mori et al. disclose manufacturing a nonaqueous electrolyte secondary battery comprising assembling and sealing the positive electrode, negative electrode, nonaqueous solvent, electrolytic solution, separator and gasket and applying a pitch adhesive sealant to the surface of the gasket (col. 10, lines 30-65). The battery manufactured is evaluated by performing a reflow furnace passage resistance test (col. 12, lines 14-16). The temperature profile of the reflow furnace test comprised a heating process of 180 °C for 2 minutes, a heating process of 180 °C for 30 seconds, 245 °C for 30 seconds and 180 °C for 30 seconds and a natural cooling process to cool to room temperature and the batteries were caused to pass the furnace three times altogether while being subjected to visual inspection and voltage examination (col. 12, lines 16-29). Thus, the batteries were screened for external abnormalities and voltage abnormalities during the heating step as the temperature of the battery naturally rises as a result of heating while passing through the furnace.

The battery manufactured is mounted onto a circuit substrate by automatic soldering according to the reflow method which has the same temperature profile stated above such that the battery is resistant to the reflow temperature during a subsequent reflow soldering (col. 1, lines 1-11 and col. 23, lines 11-23).

Response to Arguments

10. Applicant's arguments filed 1/12/2004 have been fully considered but they are not persuasive.

Art Unit: 1745

Previous art rejections based on any one of Watanabe et al. (US 2002/0068221 A1), Watanabe et al. (US 6,489,062), and Tanaka (US 5,360,685) are withdrawn in view of applicant's amendment.

With respect to art rejections based on Mori et al. (US 6,274,277 B1), applicant asserts that Mori et al. does not disclose or suggest the combined steps of heating the non-aqueous electrolyte secondary battery and screening the non-aqueous electrolyte secondary battery for abnormalities as the heating temperature of the non-aqueous electrolyte secondary battery rises during the heating step as claimed in the amended claims and that in Mori et al. measured resistance values of the batteries obtained before and after passing of the batteries through the high frequency heating reflow furnace are compared to examine the degree of deterioration of the batteries and that stated otherwise, the examination of the batteries in Mori to detect any deterioration is conducted after the batteries are passed through the high heating reflow furnace and the corresponding resistance values are measured.

In response, the Examiner disagrees with applicant's assertions regarding Mori et al. because the reference specifically discloses at column 12, lines 14-24 that batteries were caused to pass the furnace three times altogether, while being subject to visual inspection and voltage examination. The instant claims do not recite measuring resistance values. Visual inspection includes screening of external abnormalities such as bulging, explosion, leakage of electrolytes in the batteries. Voltage examination screens the batteries for voltage abnormalities. Thus, Mori et al. clearly disclose heating the battery and screening the battery for abnormalities as the

Art Unit: 1745

heating temperature of the battery rises during the heating step. As the battery is heated, the temperature of the battery inherently rises.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

Art Unit: 1745

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/ *Susy Tsang-Foster*

Susy Tsang-Foster
Primary Examiner
Art Unit 1745